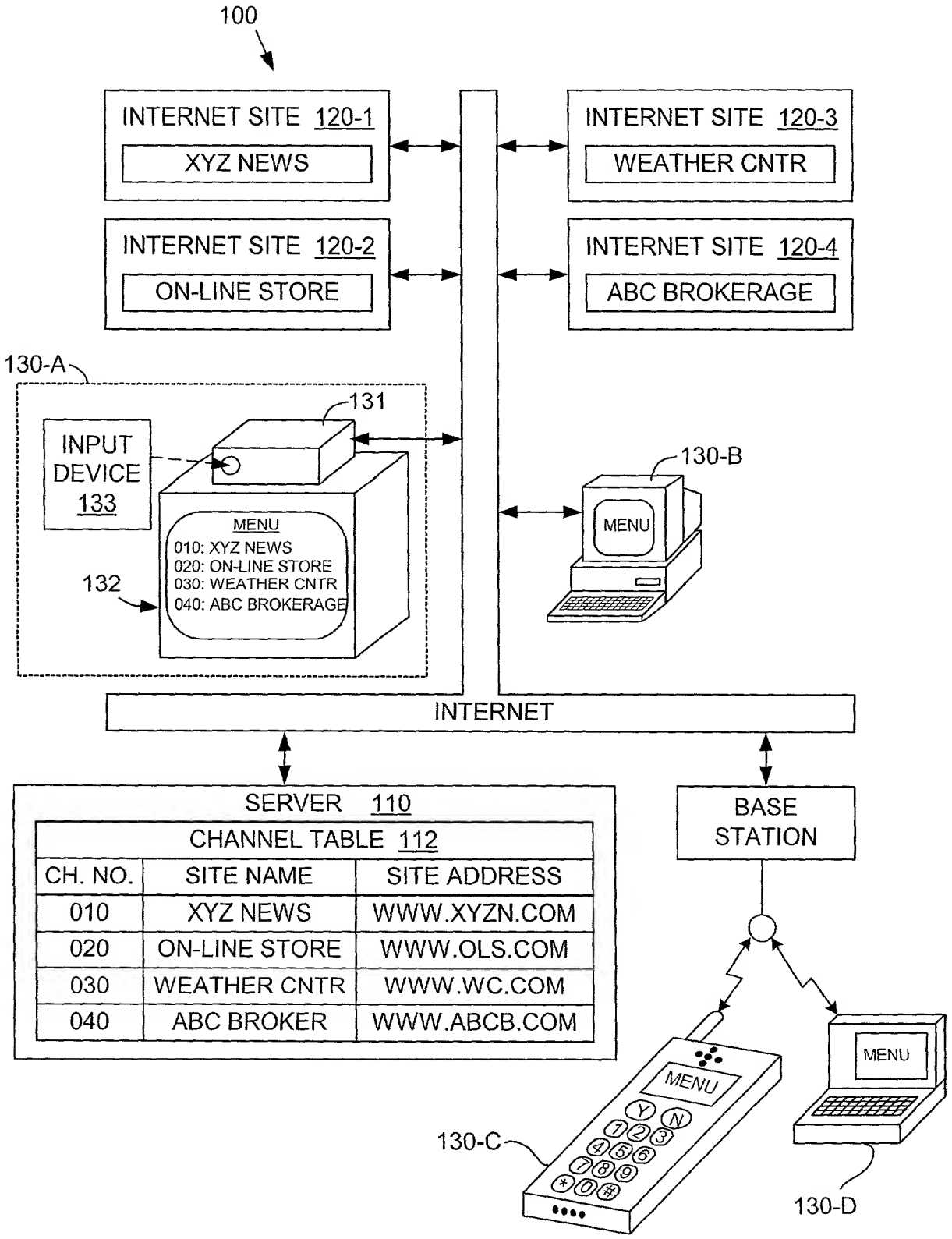
100
INTERNET SITE 120-1
XYZ NEWS
INTERNET SITE 120-3
WEATHER CNTR
INTERNET SITE 120-2
ON-LINE STORE
INTERNET SITE 120-4
ABC BROKERAGE
130-A
131
INPUT DEVICE 133
MENU
010: XYZ NEWS
020: ON-LINE STORE
030: WEATHER CNTR
040: ABC BROKERAGE
132
130-B
MENU
INTERNET
SERVER 110
CHANNEL TABLE 112
CH. NO. | SITE NAME | SITE ADDRESS
010 | XYZ NEWS | WWW.XYZN.COM
020 | ON-LINE STORE | WWW.OLS.COM
030 | WEATHER CNTR | WWW.WC.COM
040 | ABC BROKER | WWW.ABCB.COM
BASE STATION
MENU
130-C
MENU
130-D

FIG. 1

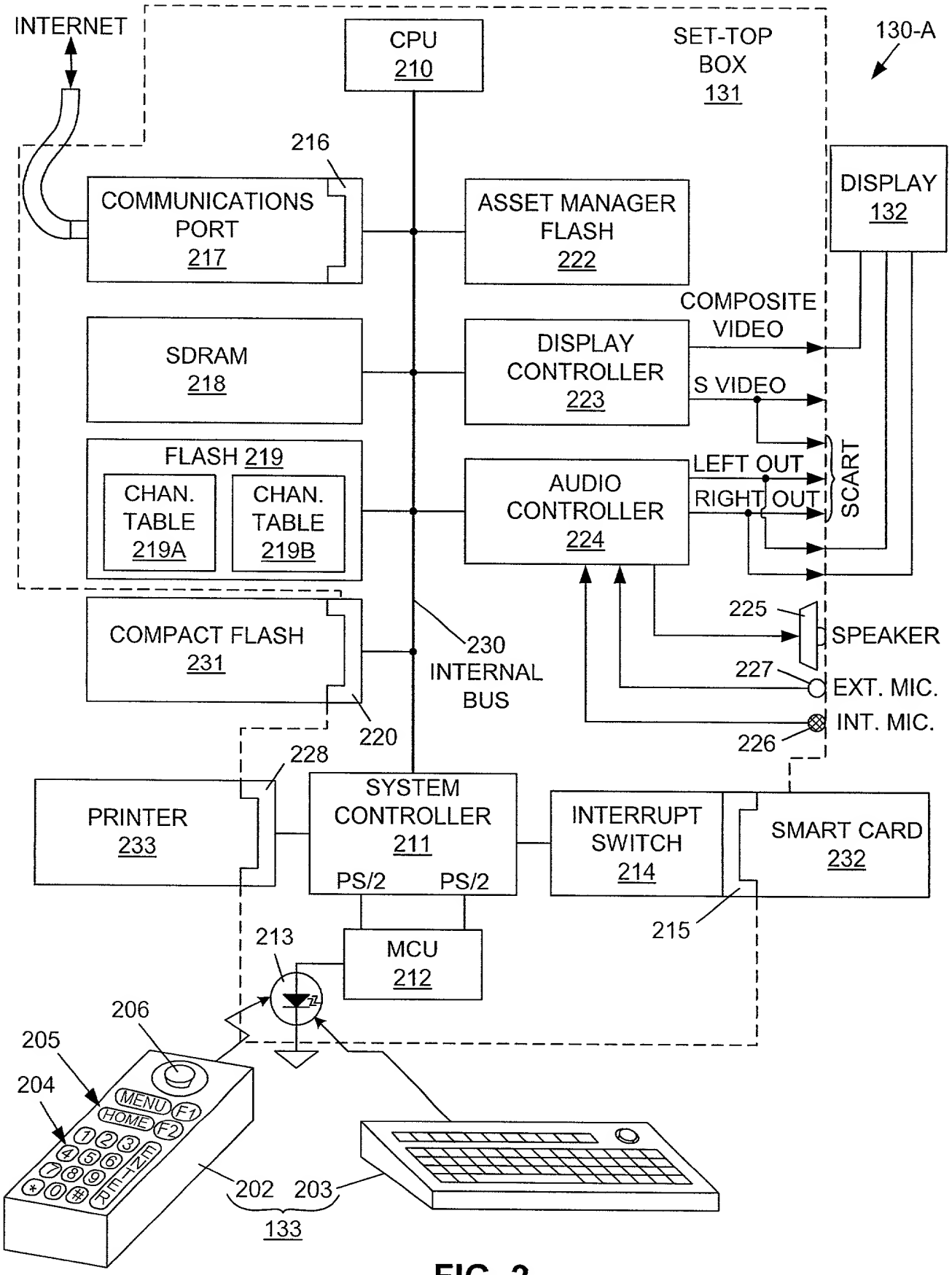
INTERNET
CPU
210
SET-TOP
BOX
131
130-A
216
COMMUNICATIONS
PORT
217
ASSET MANAGER
FLASH
222
DISPLAY
132
COMPOSITE
VIDEO
SDRAM
218
DISPLAY
CONTROLLER
223
S VIDEO
FLASH 219
CHAN.
TABLE
219A
CHAN.
TABLE
219B
AUDIO
CONTROLLER
224
LEFT OUT
RIGHT OUT
SCART
COMPACT FLASH
231
230
INTERNAL
BUS
225
SPEAKER
227
EXT. MIC.
INT. MIC.
226
220
228
PRINTER
233
SYSTEM
CONTROLLER
211
PS/2
PS/2
INTERRUPT
SWITCH
214
SMART CARD
232
215
213
MCU
212
206
205
204
MENU
F1
HOME
F2
ENTER
202
203
133

FIG. 2

CHANNEL TABLE FLASH 219

USER 1 CHANNEL TABLE 219A

CH. NO.	SITE NAME	SITE ADDRESS	PARENT CODE	FAVORITE
010	XYZ NEWS	WWW.XYZN.COM	Y	Y
020	ON-LINE STORE	WWW.OLS.COM	Y	N
030	WEATHER CNTR	WWW.WC.COM	Y	N
040	ABC BROKERAGE	WWW.ABCB.COM	Y	N
050	NET SCHOOL	WWW.NETS.COM	Y	N
060	ADULT SITE	WWW.ADULT.COM	Y	N
411	TEL DIRECTORY	WWW.ABELL.COM	Y	N
911	AMBULANCE S.	WWW.SOS.COM	Y	N

USER 2 CHANNEL TABLE 219B

CH. NO.	SITE NAME	SITE ADDRESS	PARENT CODE	FAVORITE
010	XYZ NEWS	WWW.XYZN.COM	Y	N
020	ON-LINE STORE	WWW.OLS.COM	Y	N
030	WEATHER CNTR	WWW.WC.COM	Y	Y
040	ABC BROKERAGE	WWW.ABCB.COM	Y	N
050	NET SCHOOL	WWW.NETS.COM	Y	Y
060	ADULT SITE	WWW.ADULT.COM	N	N
411	TEL DIRECTORY	WWW.ABELL.COM	Y	N
911	AMBULANCE S.	WWW.SOS.COM	Y	N

FIG. 3(A)

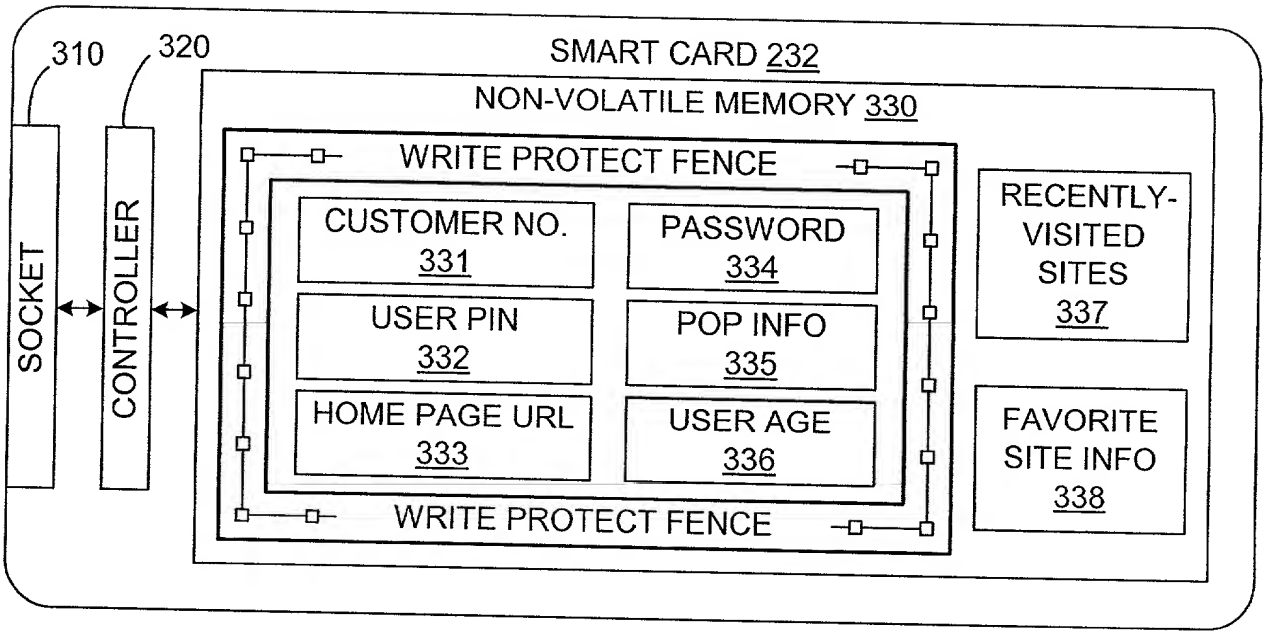
310
320
SMART CARD 232
NON-VOLATILE MEMORY 330
SOCKET
CONTROLLER
WRITE PROTECT FENCE
CUSTOMER NO. 331
PASSWORD 334
USER PIN 332
POP INFO 335
HOME PAGE URL 333
USER AGE 336
WRITE PROTECT FENCE
RECENTLY-VISITED SITES 337
FAVORITE SITE INFO 338

FIG. 3(B)

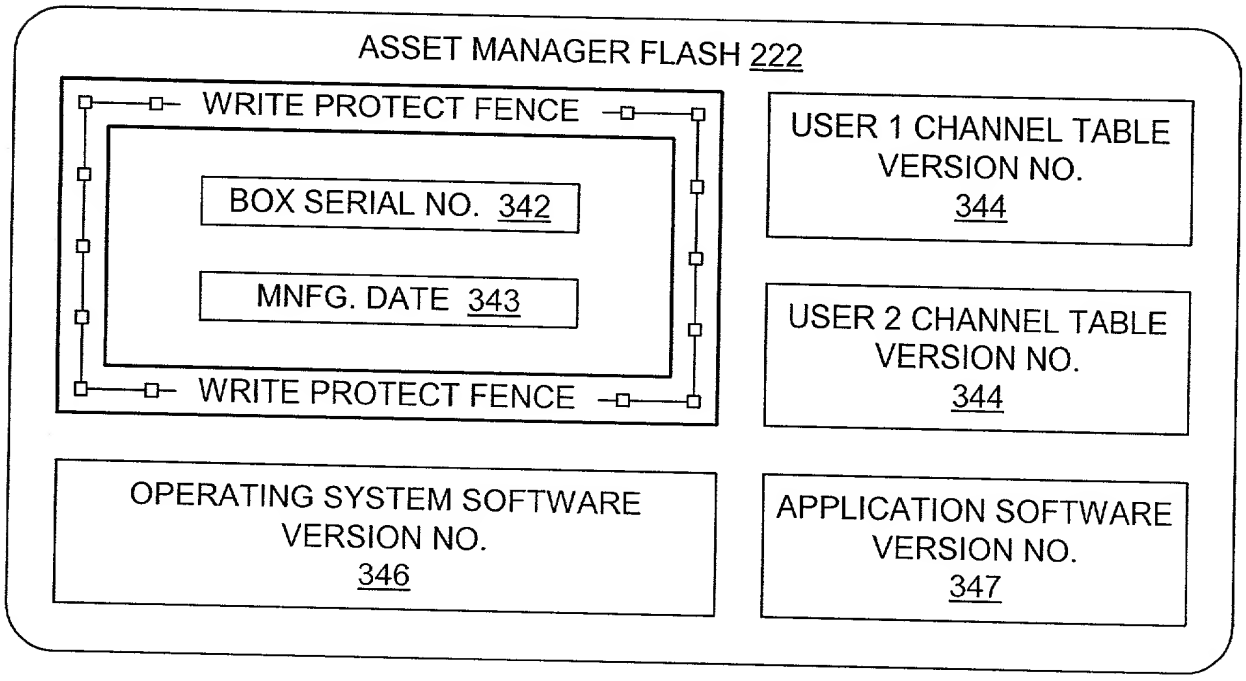
ASSET MANAGER FLASH 222
WRITE PROTECT FENCE
BOX SERIAL NO. 342
MNFG. DATE 343
WRITE PROTECT FENCE
USER 1 CHANNEL TABLE VERSION NO. 344
USER 2 CHANNEL TABLE VERSION NO. 344
OPERATING SYSTEM SOFTWARE VERSION NO. 346
APPLICATION SOFTWARE VERSION NO. 347

FIG. 3(C)

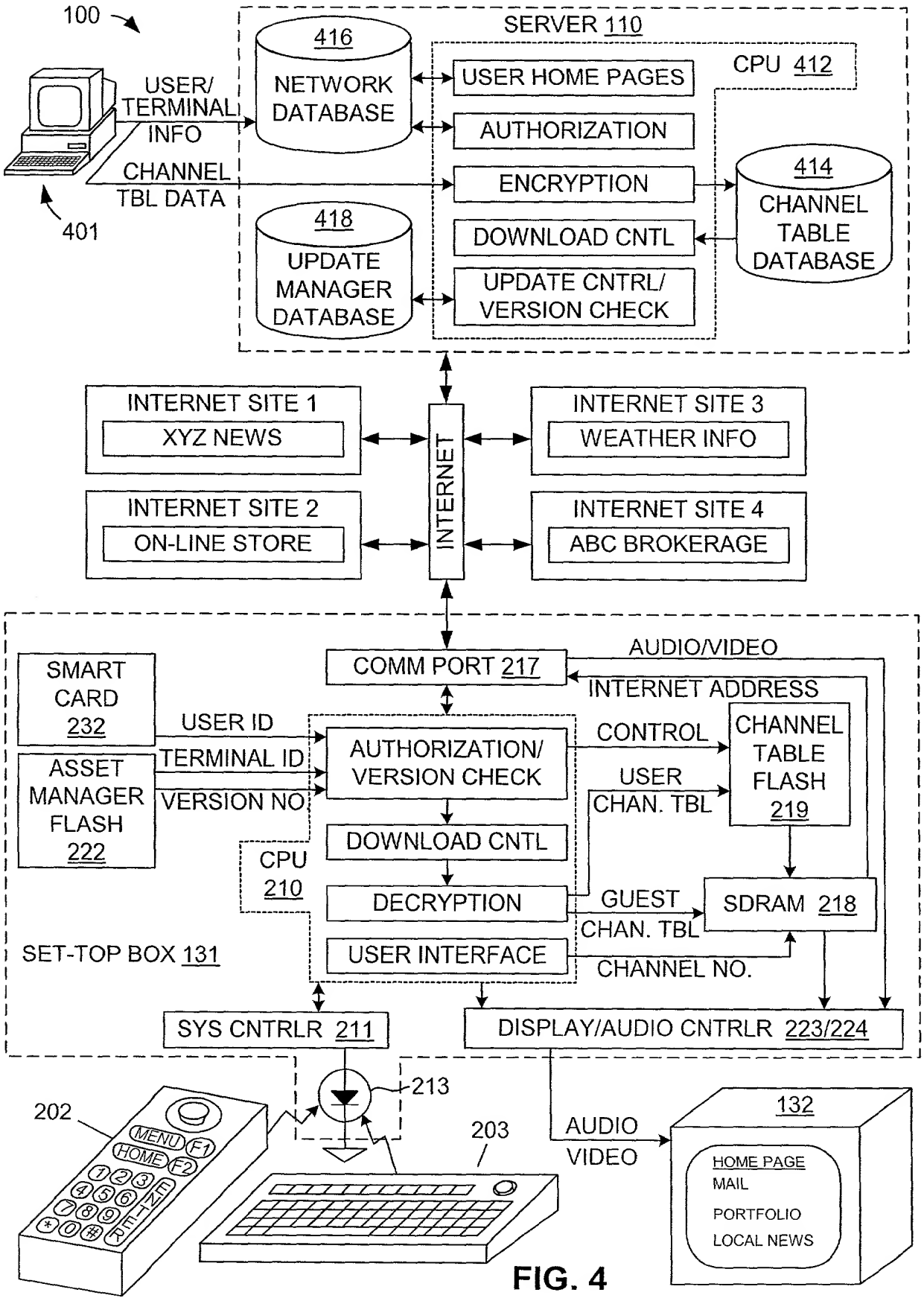
100
SERVER 110
416
NETWORK DATABASE
USER HOME PAGES
CPU 412
AUTHORIZATION
USER/ TERMINAL INFO
CHANNEL TBL DATA
ENCRYPTION
414
CHANNEL TABLE DATABASE
401
418
UPDATE MANAGER DATABASE
DOWNLOAD CNTL
UPDATE CNTRL/ VERSION CHECK
INTERNET SITE 1
XYZ NEWS
INTERNET SITE 3
WEATHER INFO
INTERNET
INTERNET SITE 2
ON-LINE STORE
INTERNET SITE 4
ABC BROKERAGE
AUDIO/VIDEO
COMM PORT 217
INTERNET ADDRESS
SMART CARD 232
USER ID
CONTROL
CHANNEL TABLE FLASH 219
AUTHORIZATION/ VERSION CHECK
TERMINAL ID
ASSET MANAGER FLASH 222
VERSION NO
USER CHAN. TBL
DOWNLOAD CNTL
CPU 210
DECRYPTION
GUEST CHAN. TBL
SDRAM 218
SET-TOP BOX 131
USER INTERFACE
CHANNEL NO.
SYS CNTRLR 211
DISPLAY/AUDIO CNTRLR 223/224
213
202
203
AUDIO
VIDEO
132
HOME PAGE
MAIL
PORTFOLIO
LOCAL NEWS

FIG. 4

CHANNEL TABLE DATABASE 414 (MASTER CHANNEL TABLE 112-A)			
CHANNEL NUMBER	SITE ADDRESS	SITE NAME	RATING
010	WWW.XYZN.COM	XYZ NEWS	PG
020	WWW.OLS.COM	ON-LINE STORE	PG
030	WWW.WC.COM	WEATHER CNTR	G
060	WWW.ADULT.COM	ADULT SITE	X
411	WWW.ABELL.COM	TELEPHONE DIRECTORY	G
911	WWW.SOS.COM	AMBULANCE SERVICE	R

FIG. 5(A)

NETWORK DATABASE 416				
USER NAME	HOME TERMINAL NO.	USER STATUS	CHANNEL TABLE TYPE	CUST. NO.
JOHN DOE	TERMINAL 1	CURRENT	ALL	CUSTOMER 1
JANE DOE	TERMINAL 1	CURRENT	SHOPPING	CUSTOMER 1
BOY DOE	TERMINAL 1	CURRENT	CHILDREN	CUSTOMER 1
JOE JOCK	TERMINAL 2	CURRENT	SPORTS	CUSTOMER 2
S. STUDENT	TERMINAL 3	CURRENT	EDUCATION	CUSTOMER 3
DAN DELAY	TERMINAL 4	EXPIRED	ALL	CUSTOMER 4

FIG. 5(B)

UPDATE MANAGER DATABASE 418			
TERMINAL NO.	USER NAME	CURRENT CHANNEL TABLE VERSION AVAILABLE	UPDATE SCHEDULED?
TERMINAL 1	JOHN DOE	STANDARD 020	YES
TERMINAL 1	JANE DOUGH	SHOPPING 007	YES
TERMINAL 2	JOE JOCK	SPORTS 013	NO
TERMINAL 4	DAN DELAY	STANDARD 020	NO

FIG. 5(C)

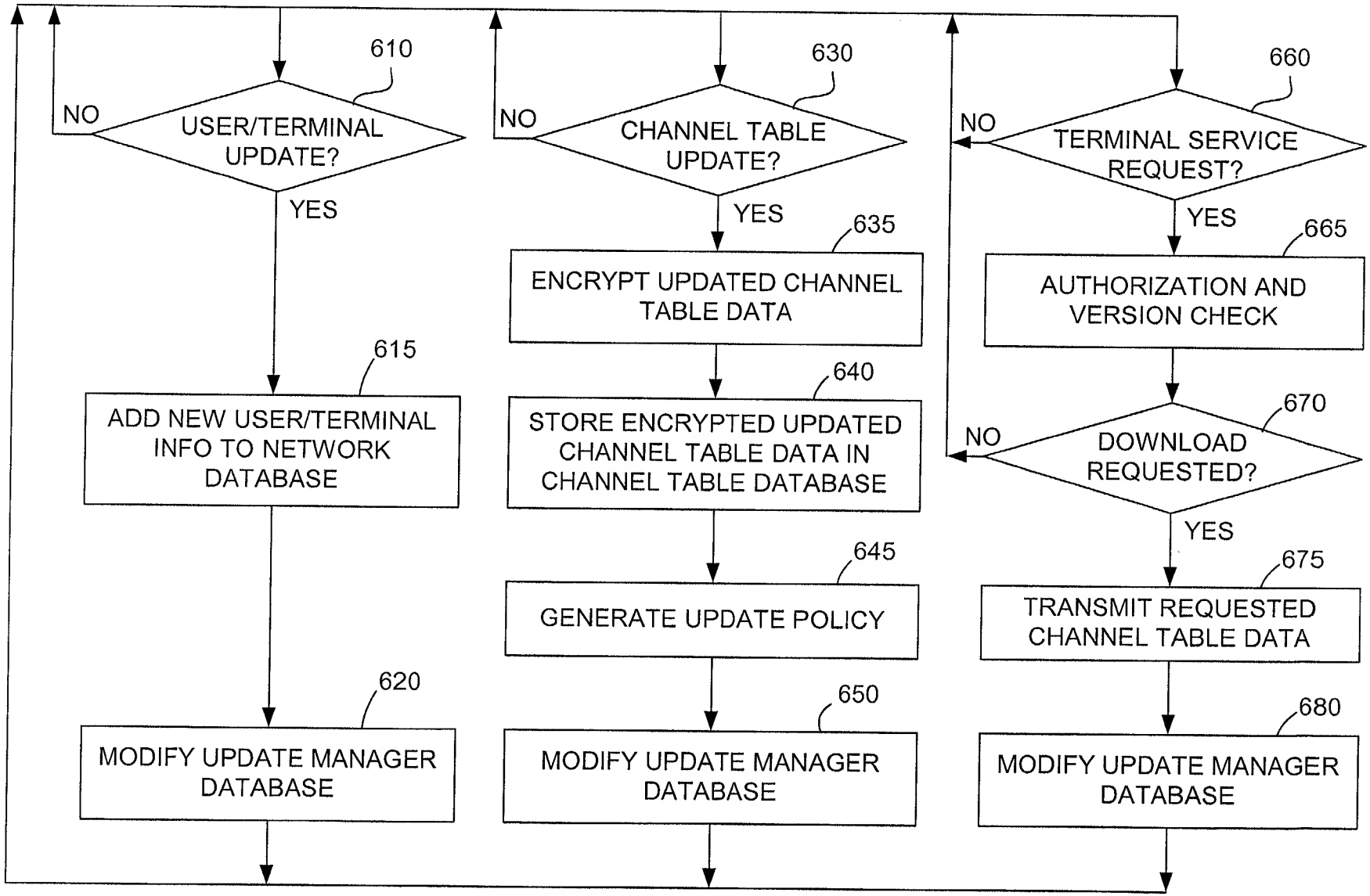
610
USER/TERMINAL UPDATE?
NO
YES
615
ADD NEW USER/TERMINAL INFO TO NETWORK DATABASE
620
MODIFY UPDATE MANAGER DATABASE
630
CHANNEL TABLE UPDATE?
NO
YES
635
ENCRYPT UPDATED CHANNEL TABLE DATA
640
STORE ENCRYPTED UPDATED CHANNEL TABLE DATA IN CHANNEL TABLE DATABASE
645
GENERATE UPDATE POLICY
650
MODIFY UPDATE MANAGER DATABASE
660
TERMINAL SERVICE REQUEST?
NO
YES
665
AUTHORIZATION AND VERSION CHECK
670
DOWNLOAD REQUESTED?
NO
YES
675
TRANSMIT REQUESTED CHANNEL TABLE DATA
680
MODIFY UPDATE MANAGER DATABASE

FIG. 6

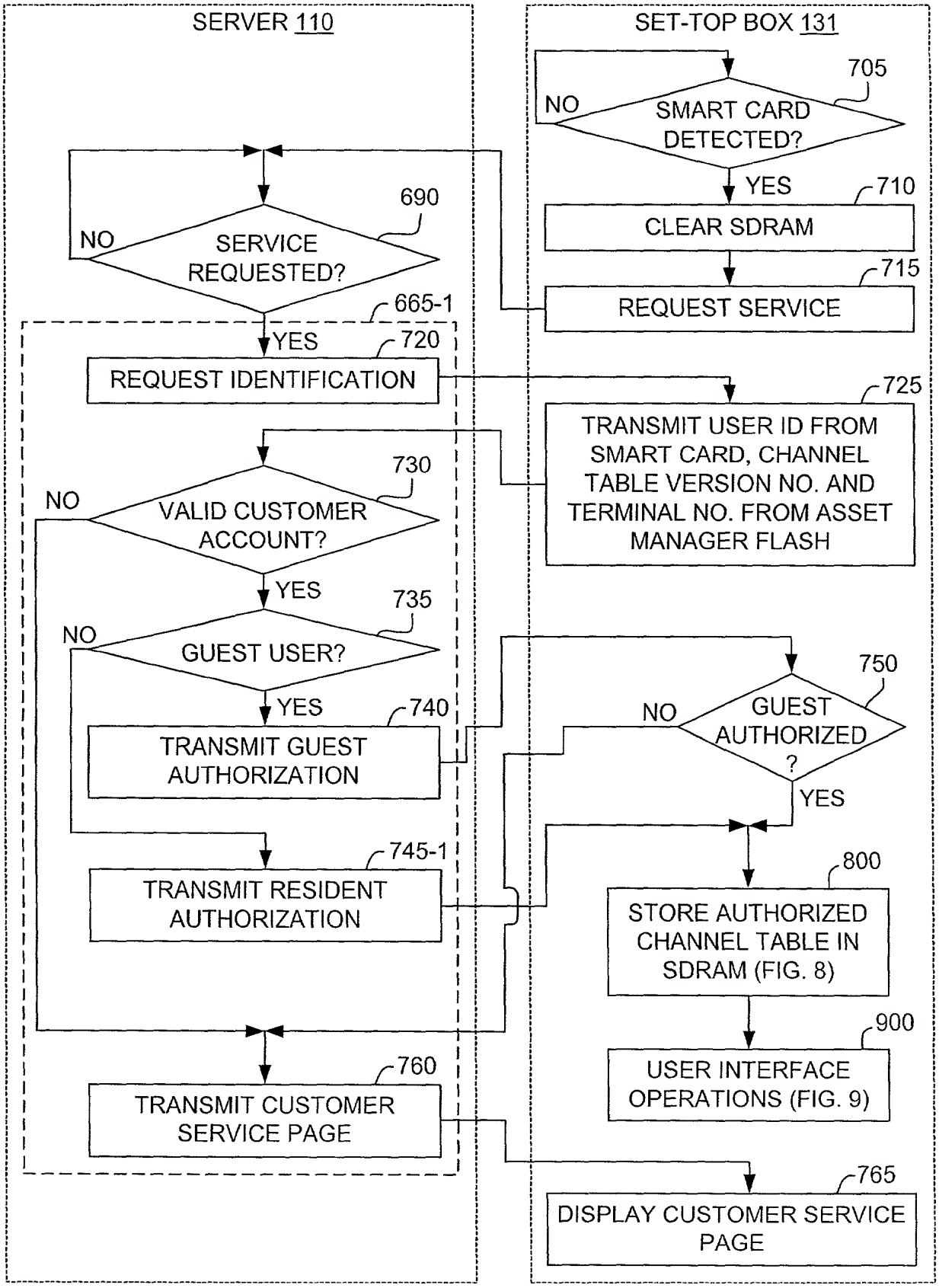
SERVER 110
SET-TOP BOX 131
705
NO
SMART CARD DETECTED?
YES
710
CLEAR SDRAM
715
REQUEST SERVICE
690
NO
SERVICE REQUESTED?
665-1
YES
720
REQUEST IDENTIFICATION
725
TRANSMIT USER ID FROM SMART CARD, CHANNEL TABLE VERSION NO. AND TERMINAL NO. FROM ASSET MANAGER FLASH
730
NO
VALID CUSTOMER ACCOUNT?
YES
735
NO
GUEST USER?
YES
740
TRANSMIT GUEST AUTHORIZATION
750
NO
GUEST AUTHORIZED ?
YES
745-1
TRANSMIT RESIDENT AUTHORIZATION
800
STORE AUTHORIZED CHANNEL TABLE IN SDRAM (FIG. 8)
900
USER INTERFACE OPERATIONS (FIG. 9)
760
TRANSMIT CUSTOMER SERVICE PAGE
765
DISPLAY CUSTOMER SERVICE PAGE

FIG. 7

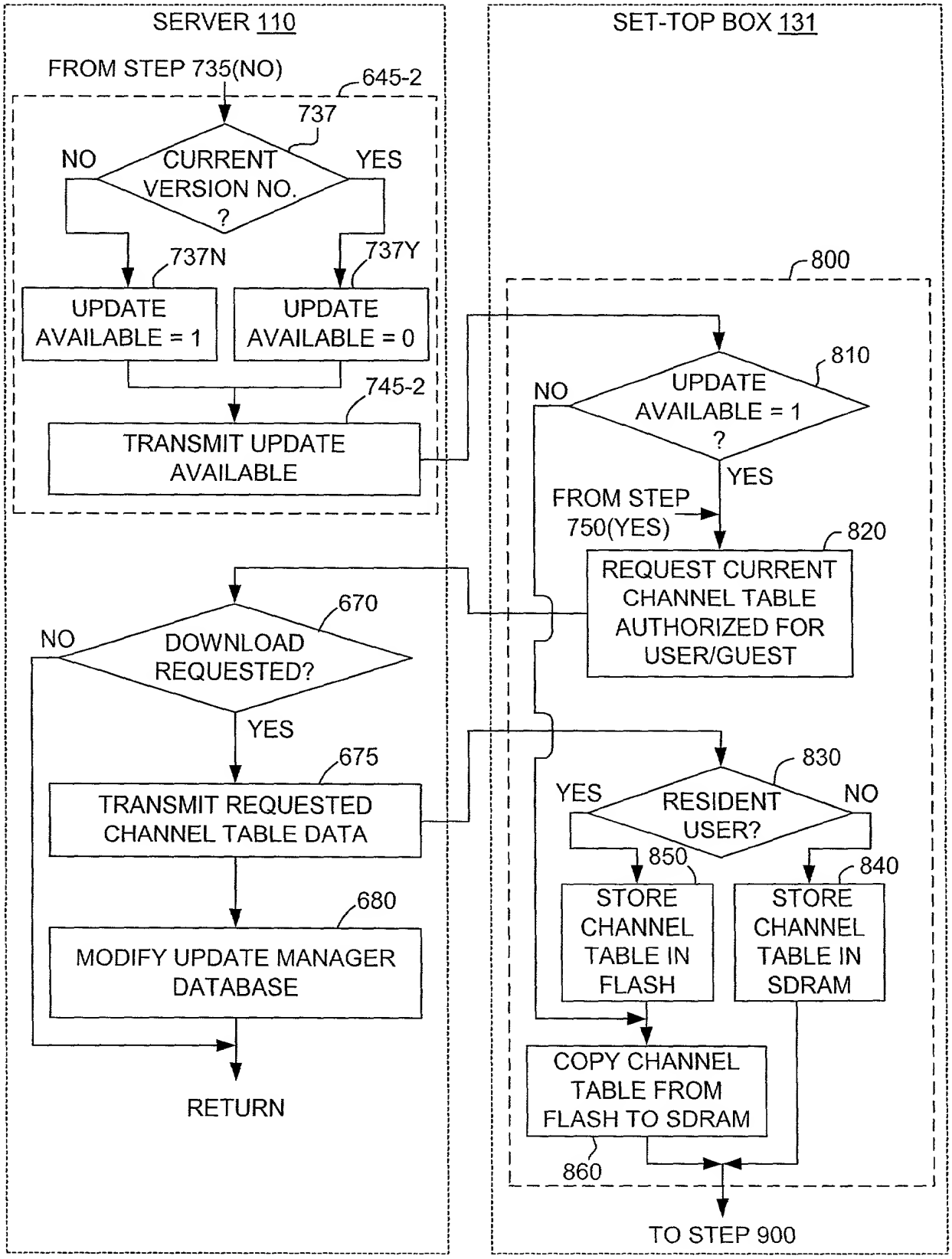
SERVER 110
SET-TOP BOX 131
FROM STEP 735(NO)
645-2
737
NO
CURRENT VERSION NO. ?
YES
737N
737Y
UPDATE AVAILABLE = 1
UPDATE AVAILABLE = 0
745-2
TRANSMIT UPDATE AVAILABLE
800
810
NO
UPDATE AVAILABLE = 1 ?
YES
FROM STEP 750(YES)
820
REQUEST CURRENT CHANNEL TABLE AUTHORIZED FOR USER/GUEST
670
NO
DOWNLOAD REQUESTED?
YES
675
TRANSMIT REQUESTED CHANNEL TABLE DATA
680
MODIFY UPDATE MANAGER DATABASE
RETURN
830
YES
RESIDENT USER?
NO
850
840
STORE CHANNEL TABLE IN FLASH
STORE CHANNEL TABLE IN SDRAM
COPY CHANNEL TABLE FROM FLASH TO SDRAM
860
TO STEP 900

FIG. 8(A)

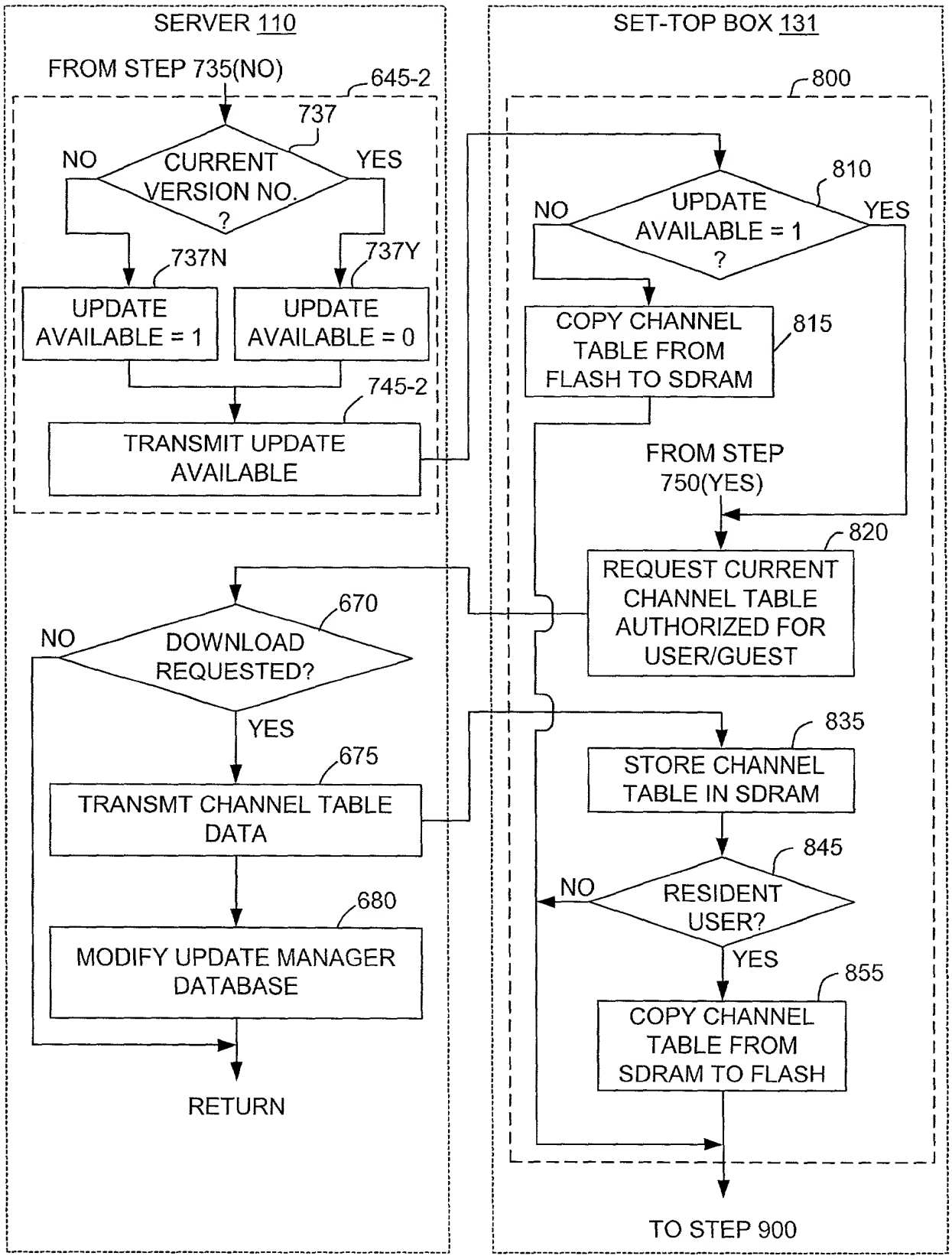
SERVER 110
SET-TOP BOX 131
FROM STEP 735(NO)
645-2
737
CURRENT VERSION NO. ?
NO
YES
737N
737Y
UPDATE AVAILABLE = 1
UPDATE AVAILABLE = 0
745-2
TRANSMIT UPDATE AVAILABLE
800
810
UPDATE AVAILABLE = 1 ?
NO
YES
COPY CHANNEL TABLE FROM FLASH TO SDRAM
815
FROM STEP 750(YES)
820
REQUEST CURRENT CHANNEL TABLE AUTHORIZED FOR USER/GUEST
670
DOWNLOAD REQUESTED?
NO
YES
675
TRANSMT CHANNEL TABLE DATA
680
MODIFY UPDATE MANAGER DATABASE
RETURN
835
STORE CHANNEL TABLE IN SDRAM
845
RESIDENT USER?
NO
YES
855
COPY CHANNEL TABLE FROM SDRAM TO FLASH
TO STEP 900

FIG. 8(B)

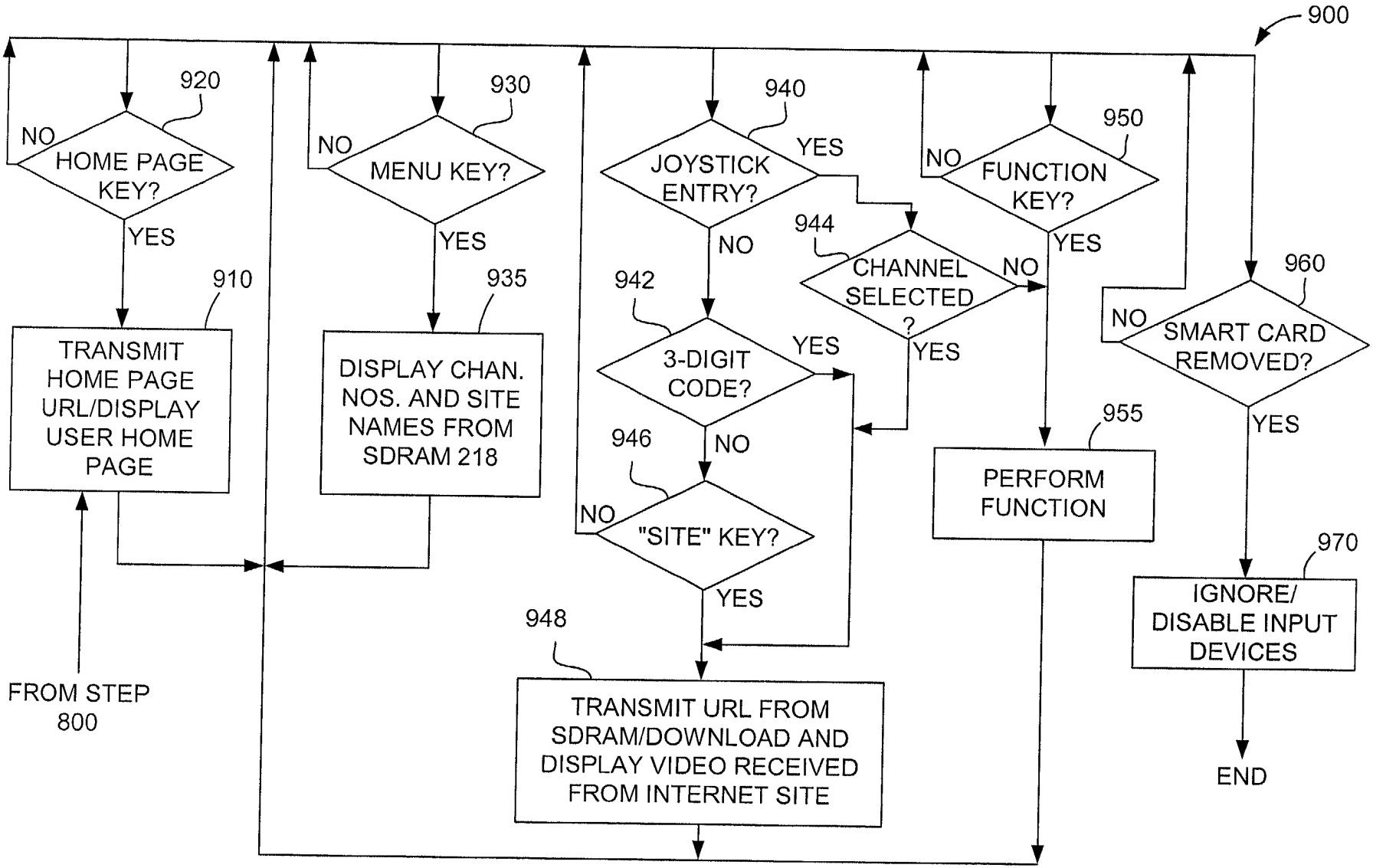
900
920
HOME PAGE KEY?
NO
YES
910
TRANSMIT HOME PAGE URL/DISPLAY USER HOME PAGE
930
MENU KEY?
NO
YES
935
DISPLAY CHAN. NOS. AND SITE NAMES FROM SDRAM 218
940
JOYSTICK ENTRY?
YES
NO
942
3-DIGIT CODE?
YES
NO
946
"SITE" KEY?
NO
YES
944
CHANNEL SELECTED ?
NO
YES
950
FUNCTION KEY?
NO
YES
955
PERFORM FUNCTION
960
SMART CARD REMOVED?
NO
YES
970
IGNORE/ DISABLE INPUT DEVICES
948
TRANSMIT URL FROM SDRAM/DOWNLOAD AND DISPLAY VIDEO RECEIVED FROM INTERNET SITE
FROM STEP 800
END

FIG. 9

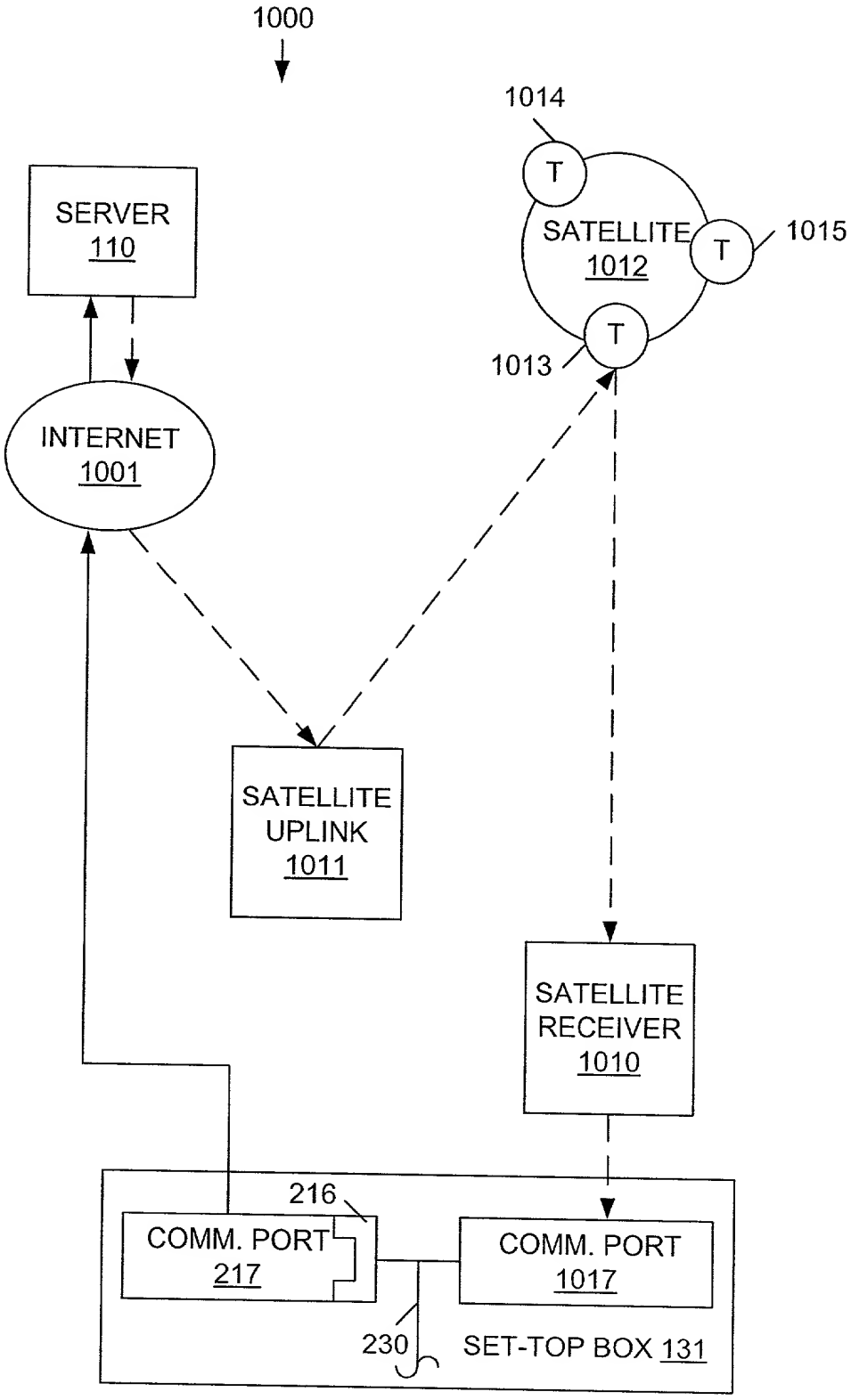
1000
1014
T
SERVER
110
SATELLITE
1012
T
1015
T
1013
INTERNET
1001
SATELLITE
UPLINK
1011
SATELLITE
RECEIVER
1010
216
COMM. PORT
217
COMM. PORT
1017
230
SET-TOP BOX 131

FIG. 10

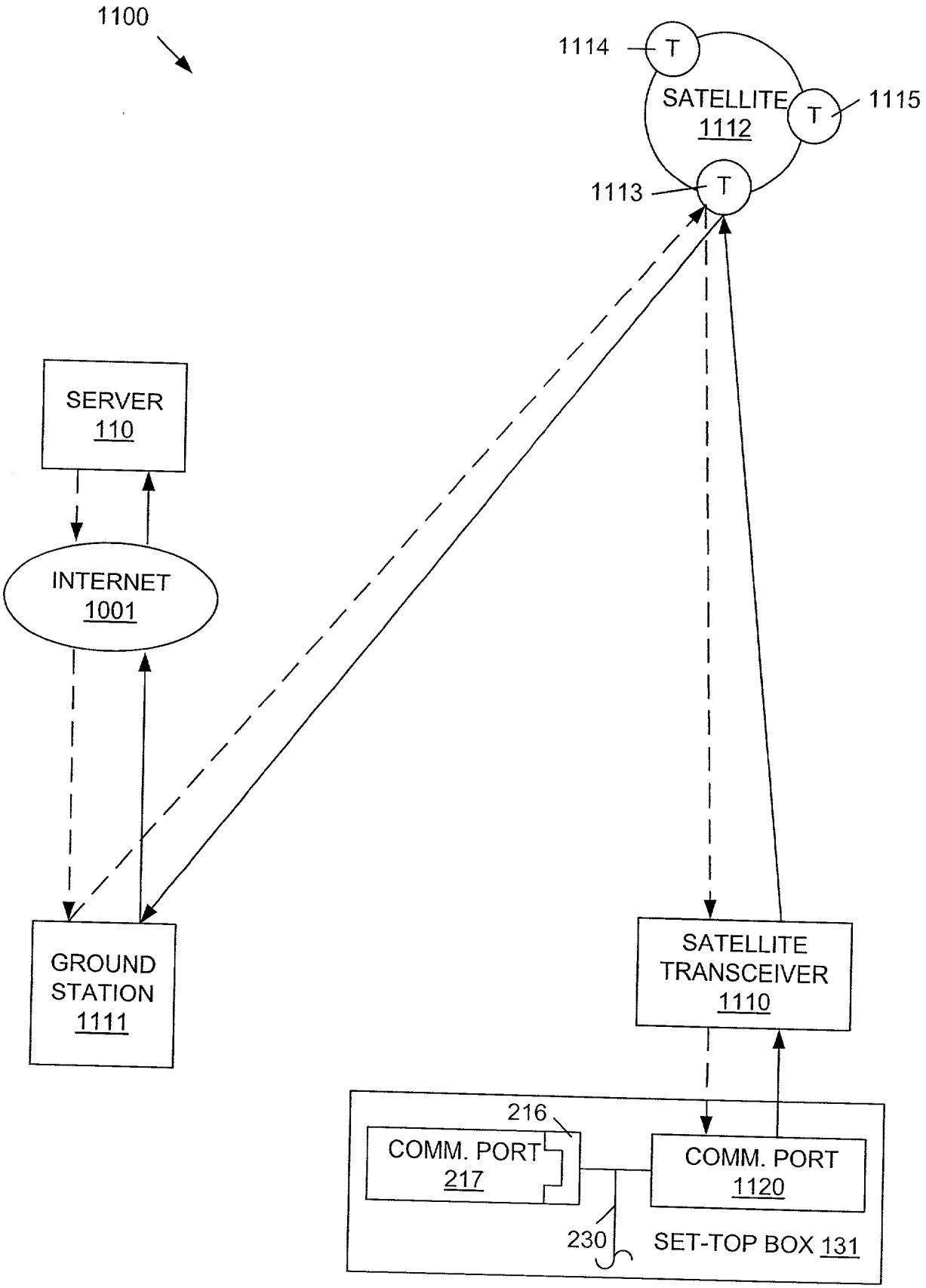
1100
1114
T
SATELLITE
1112
T
1115
1113
T
SERVER
110
INTERNET
1001
GROUND
STATION
1111
SATELLITE
TRANSCEIVER
1110
216
COMM. PORT
217
COMM. PORT
1120
230
SET-TOP BOX 131

FIG. 11